UNITED STATES MARINE CORPS
C Company
Marine Corps Communication-Electronics School
Marine Corps Air Ground Combat Center
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Student Handout
(SH)

Marine Air Command and Control System 200 Level
Training and Readiness (T & R) Instruction

LESSON DESIGNATOR: A-16

lESSON TITLE: DATA LINK SYMBOLOGY

I. ENABLING LEARNING OBJECTIVES: Without the aid of, but in
accordance with the references, select the:

    A. The three basic symbol shapes.

    B. The three symbol classifications.

    C. The ASCII character modifier associated with its
definition.

    D. The Fire Unit ASCII character modifier associated with
its definition.

II. LESSON PLAN / OVERVIEW: Symbology provides the operator
with a visual interpretation of the current tactical air
situation. Decisive air operations may depend on the ability of
the operator to identify the symbology displayed. This lesson
will provide the student with the basic knowledge required to
visually identify the symbology used in the Marine Air Command
and Control System. The lesson will describe the basic symbol
characteristics and modifiers.

III. STUDENT INSTRUCTIONS:

    A. Read the handout.

    B. Attend the lecture if provided.

IV. PRESENTATION OUTLINE:

    A. BASIC CHARACTERISTICS OF A SYMBOL.

        1. There are three symbol types: Tracks, points, and
strobes.

a. Tracks. Tracks are normally position-updated, either manually, (repositioned by the operator) or automatically (by tracking software), to reflect a course and speed that correspond to an associated target video return. Tracks have three basic shapes: circle, diamond, or square. These shapes are associated with the following identifications, respectively: friends, hostiles, and unknowns. by modifying the three basic shapes, the Computer Unit (CU) is able to generate all tracks used in the Marine Air Command and Control System (MACCS). Track identifications are listed below with their associated identification amplification:

    (1) Friend. Green tracks with a circular shape.

        (a) GENL

        (b) HELO

        (c) SPCL MSN

        (d) STRIKE SPRT

        (e) INTCPR/FTR

    (2) Hostile. Yellow tracks with a diamond shape.

        (a) GENL

        (b) MSL

        (c) BMR

        (d) FTR

        (e) AEW/REC/EW/DCOY

        (f) HELO/TRANS

        (g) MSL PLATF

        (h) JAMMER

    (3) Unknown. Tracks with a square shape.

        (a) EVAL

        (b) ASMD FRD

        (c) ASMD EN

NOTE: Ships are considered tracks because they can be position updated. They can be classified as friend, hostile, or unknown by the operator.

     b. Points. Points are symbols that remain stationary.

NOTE: The only exception is the Other Center Symbol. When an Other Center Symbol represents an Active PU (Participating Unit) on TADIL-A, and the PU is an airborne platform, the symbol will move with the platform (the symbol position is updated by the platform). If the Other Center Symbol does not represent an active, airborne PU, it will remain stationary. In either case, the Other Center Symbol will not have a velocity vector, but the speed and heading will appear in the Hook Data Readout (HDRO).

     Points fall into the following categories:

     (1) EMER

     (2) SITE

     (3) REFPT

     (4) SPRT/U

     (5) STA/G

     (6) STA/A

     (7) S/HOSTL

     (8) ECM FIX

     (9) HAZ

     c. Strobes. Jam strobes are defined as an automatic or manually generated, specifically colored, straight line representing the azimuth and frequency of a jamming platform. All strobes are represented by a straight line originating at the source detecting the strobe (usually a RADAR) and terminating at the edge of the scope. They are generally considered to be hostile, and appear in three different colors representing three frequency ranges.

     2. Modifiers. Modifiers can be added to track symbols to classify them further or to alert the operator to specific conditions related to the track. Modifiers assume different shapes, sizes, and forms. Symbols may blink and/or expand, and will be displayed at the same intensity level as the symbol.

a. Incoming Orders ([ ). This modifier alerts the operator to certain incoming data link messages such as Engage, Cease Engage, TADIL-C established, etc. The incoming order modifier is the same for all symbols. When a symbol has an incoming order associated with it, the modifier appears next to the symbol and the symbol will blink. Further operator action is required to display the message. The modifier can be associated with all tracked targets except tentative tracks.

b. Outgoing Orders( ]). This modifier informs the operator that certain outgoing data link messages have been sent to the specific track such as Engage, Cease Engage, etc. The symbol will not indicate the specific nature of the message. Further operator action is required to determine the exact message. The symbol will blink if the receiving center is unable to comply or they reject the order. The modifier can be associated with all tracked targets except Pending.

c. Do Not Intercept (X). This is a modifier placed on a track to inform the appropriate agencies that this specific track is not to be intercepted. It appears as an X on the symbol, and will be the same color as the symbol. The modifier can be associated with the following tracks:

(1) Evaluated Unknown

(2) Assumed Friend

(3) Assumed Enemy

(4) Faker

(5) Hostile

(6) Hostile Raid

d. Air-to-Ground Report (see graphics file). This modifier is placed on a track to indicate that the track is being reported via the TADIL-C data link by an AEW aircraft. The modifier can be associated with the following tracks:

(1) Pending

(2) Assumed Friend

(3) Assumed Enemy

(4) Evaluated Unknown

(5) Miscellaneous Friend

(6) Hostile

(7) Jam Strobe

e. Ground-to-Air Report (see graphics file). This modifier is placed on a track to indicate that the track is being reported via the TADIL-C data link to an AEW aircraft. This modifier can be associated with the following tracks:

(1) All tracked targets except tentative tracks

(2) Air base

(3) Way point

(4) Pointer

f. Engaged (see graphics file). This modifier appears as a horizontal bar; one on the target and one on the weapon engaged to the target. A pairing line will be displayed between the engaged pair. The modifier can be of two lengths, the shorter of which is only associated with a Fire Unit. The longer bar can be associated with all of the following tracks:

(1) Evaluated Unknown

(2) Assumed Friend

(3) Assumed Enemy

(4) Interceptor

(5) AEW Interceptor

(6) Faker

(7) Hostile

(8) Hostile Raid

g. Jammer (see graphics file). this modifier is affixed to a track to indicate the known or suspected jamming status of the track. It is associated with the following tracks:

(1) Faker

(2) Hostile

h.   Return to Base (\ ). This modifier is affixed to a track to indicate that the aircraft is returning to base (RTB). It can be associated with the following tracks:

(1) Miscellaneous Friend

(2) Interceptor

(3) AEW Interceptor

(4) Friend Raid

i.   Search and Rescue (see graphics file). This modifier is placed on a track to indicate that the track is involved in a Search and Rescue (SAR) mission. It can be associated with the following tracks:

(1) Miscellaneous Friend

(2) Helicopter

j.   Out of Action (see graphics file). This modifier consists of the letter "O" appearing directly above a fire unit symbol to indicate that the particular unit is not presently operating. Other fire unit modifiers are listed in the supplemental handout.

k.   Symbol Blinks, or Symbol Blinks and Expands. The symbology will blink and/or expand to alert the operator to certain conditions concerning the track. If the symbol blinks but does not expand, it is indicating a priority one alert for the track. An emergency modifier is an example of a priority one alert. The emergency modifier appears as an "E" above the track and can be associated with all of the following tracks:

(1) Miscellaneous Friend

(2) Interceptor

(3) AEW Interceptor

(4) DAS

(5) Helicopter

(6) Tanker

(7) Faker

(8) Friend Raid

If the symbol blinks and expands, it indicates that the CU's are not receiving position reports on the track. When a symbol blinks and expands, it is said to be in the "Lost Track" state. Lost track symbols will disappear from the scope after thirty seconds if no updates are received. Lost track modifiers can be associated with all tracked targets.

NOTE: If the track is assigned or engaged, it will expand and blink, but it will not disappear until the assignment or engagement is canceled.

l. Gate Modifiers. There are two types of Gates. They are: Friend Raid and Hostile Raid. The raid gate modifier appears as a box (the size of which will correspond to the gate size selected, i.e., 16, 32, or 64 miles) around the tracked symbol.

NOTE: For a complete illustration and listing of all the symbology used in the MACCS, refer to the Supplemental Handout (graphics file).

V. DEMONSTRATION/APPLICATION: N/A

VI. SUMMAR/DEBRIEF: We have discussed the different shapes and types of symbols used in the MACCS.

VII. REFERENCES:

TM 08565A-10/1 (TACTICAL AIR OPERATIONS MODULE AN/TYQ-23(V)1)
U-TAOM-PCL-01274 (TAOM POCKET CHECKLIST) 1 June 95

Last reviewed: 980622